Alsos Mission
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3-2 Boris Pash

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Subject File

Alsos Mission
World War, 1939 - 1945
Germany

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NO. 1 OF 5 COPIES, SERIES A

P. O. BOX 1663
SANTA FE, NEW MEXICO

June 5, 1944

Major Robert Furman
P. O. Box 2610
Washington, D. C.

Dear Major Furman:

We have had a request from Dr. Morrison to send you some account of what sort of installation, equivalent to Y, the Germans might have or need. We have discussed this matter informally with you in the past and the present statement is only for the record.

1. The answer to this question is complicated to the point where it may be useless by the fact that the program of Y is a fairly ambitious one and that it may be paralleled in Germany, but that a possible program making less advantageous use of material and requiring a much greater production schedule could be carried out with much more meager facilities and less talented personnel.

2. In general we should say that any program involving the use of 49 would have as indispensable parts a large chemical and metallurgical group, a group working on nuclear physics experimentally, some strong theoretical advice, and an ordnance program, not necessarily very extensive but involving unconventional ordnance problems and at least one proving ground. We should doubt whether even with modest objectives and reasonably long time scale effective use could be made of 49 by an installation with a personnel under 200, and our estimate of the time needed for the development of the necessary methods would be at least two years from the foundation of the organization, and at least six months from the time when macroscopic amounts of 49 would be available.

3. In the case of an organization devoted exclusively to the application of 25 and operating along conservative lines we should again expect a group of experimental nuclear physicists, strong theoretical advice, and a metallurgy and engineering group which might operate with conventional means, but which would undoubtedly need a proving ground of some kind. For this problem we believe that a

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minimum of 100 people would be needed and that probably a year and a half would be required to carry out the necessary development. These estimates of time and personnel are minimal and imply no radical development work.

4. It is possible that the Germans may be contemplating other methods of solving the problems of Y than have occurred to us or seem to us promising. Any installation would have to have a rather strong group in experimental nuclear physics, would have to have competent theoreticians, engineers and metallurgists. An installation of the size of Y would imply on the part of the Germans an effort to make the most effective use of the material and to provide weapons of great military significance with a somewhat restricted production schedule.

5. It has already been pointed out to you that the position of Heisenberg in German physics is essentially unique. If we were undertaking the Y program in Germany, we should make desperate efforts to have Heisenberg as collaborator. It is hard for us to believe that they would be embarked on this program without taking advantage of his help.

Sincerely yours,

Luis W. Alvarez

Luis Alvarez

J. R. Oppenheimer

J. R. Oppenheimer

cc: General Groves
Philip Morrison

This document contains information affecting the national defense of the United States within the meaning of the Espionage [illegible] U.S.C. 50 31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

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Allied Mission (World War), 1939-1945
Germany

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SUMMARY OF INFORMATION

Received between
1 May and 31 May 1944

The possibility of a German project of more than pilot plant size grew less and less remote during the last month. The Czech mines at Joachimstahl and Schoenficht which were photographed showed little increased activity since the war. Heavy water production at Rjukan has stopped completely. Research work in Bohr's laboratory in Copenhagen is reported at a standstill. Von Weizsacker, who was reported in charge of the laboratory, has returned to Strassbourg. Dresden, often reported as a seat of secret weapon activities and associated with the name of Heisenberg and heavy water, has been found to be the center of the crossbow activity. There is evidence that hydrogen peroxide, the propellant for rockets, is the subject of research at Dresden. Thus, rumors that Dresden is connected with this project seem unlikely unless the work in Dresden is of a minor nature. More evidence has been discovered connecting the Reichspost with nuclear research. It has been reported that certain German patent rights have been applied for in connection with thermal diffusion equipment.

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SUMMARY OF IMPORTANT INFORMATION

Received between
1 April and 30 April 1944

General

Recent information has not changed the general picture and has indicated continued German interest in research and development. Heisenberg's name is prominently in the foreground. Scattered reports suggest the possibility of an operating plant possibly near Dresden.

The activities of this office in April have been largely in the field of organizing agencies to look for and forward information of importance. The new Scientific Mission was approved by the Chief of Staff. The review of literature on the diffusion and centrifuge methods was accomplished. The District Counterintelligence officers were organized to handle positive reports. The G-2 and OSS representatives in the various countries surrounding enemy-occupied Europe were conducting investigations with results interesting to this office. Further air tests were made of detection instruments.

Norwegian Production of Heavy Water

Norwegian production of heavy water at some of the Rjukan plants has dropped to zero after the last bombing. Fifty casks of heavy water on ten railroad cars were sent to the bottom as they were being ferried at Tinnsjoen. Heavy water production is estimated at about 40% of its former amount. Another report announces that both production and experimental work has stopped.

Mr. Bach Wiig has been made chairman of A/S Norsk Hydro. A German representative of I. G. Farben, a Mr. Ilgner, was recently in Norway and approved of a plan which involves excluding heavy water production at Norsk Hydro. Ilgner is supposed to have expressed the opinion that the Allies have bombed very few German factories supplying purely civilian needs. According to present rumor, only fertilizer for Norwegian use will be made by Norsk Hydro, and the Allies are said to have promised not to bomb the plant.

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Subject File
Germany, 1939-1945

Columbia Serial 100U-L-553
File 4.7-0

COLUMBIA UNIVERSITY
DIVISION OF WAR RESEARCH
SAM LABORATORIES

April 4, 1944

SECRET

REPLY TO THE UNDERSIGNED
HAVEMEYER HALL
COLUMBIA UNIVERSITY
BROADWAY AT 119TH STREET
NEW YORK, N. Y.

Major General L. R. Groves
P.O. Box 2610
Washington, D.C.

Dear General Groves:

With this letter I am transmitting to you a letter from Dr. Karl Cohen to you, and a report on the present status of the enemy literature in regard to the separation methods, as prepared by him. His conclusion is that the enemy is proceeding actively on some program looking to the use of atomic fission as a military weapon. He thinks that this is most likely to be along the lines of the thermal diffusion method, because he believes, and I concur in this, that the Germans can only afford large quantities of coal and steel, rather than large expenditure of technical effort as required for other methods.

It is my own belief that the chances are strongly against the enemy having made any large development along these lines. I should say that there is a ten to one chance that he has not succeeded in producing any appreciable separation, and that he will not succeed in producing any in the course of this war. On the other hand, the 10% chance is too much to neglect, and what is proposed in Dr. Cohen's report would require but small effort to combat as much as possible any effectiveness of German plans. If they are indeed using the thermal diffusion method there must be a substantial power development associated with the project. It might be located in one place, in which case the steam plant would be colossal; on the other hand, it might be located in several places, but even if this is the case, the steam plant would not be small unless his production units were so small that the efficiency of operation would be seriously decreased. Therefore, it would seem to me that it would be possible to look for this development with a relatively small amount of man power, as suggested by Dr. Cohen.

Very sincerely,

Harold C. Urey

Harold C. Urey
Director of Research

#1 Maj.Gen. L.R. Groves
#2 H. C. Urey file
Encls. SO and cc Cohen to Groves
4-R-156, copies 1 and 2

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Subject File
Germany

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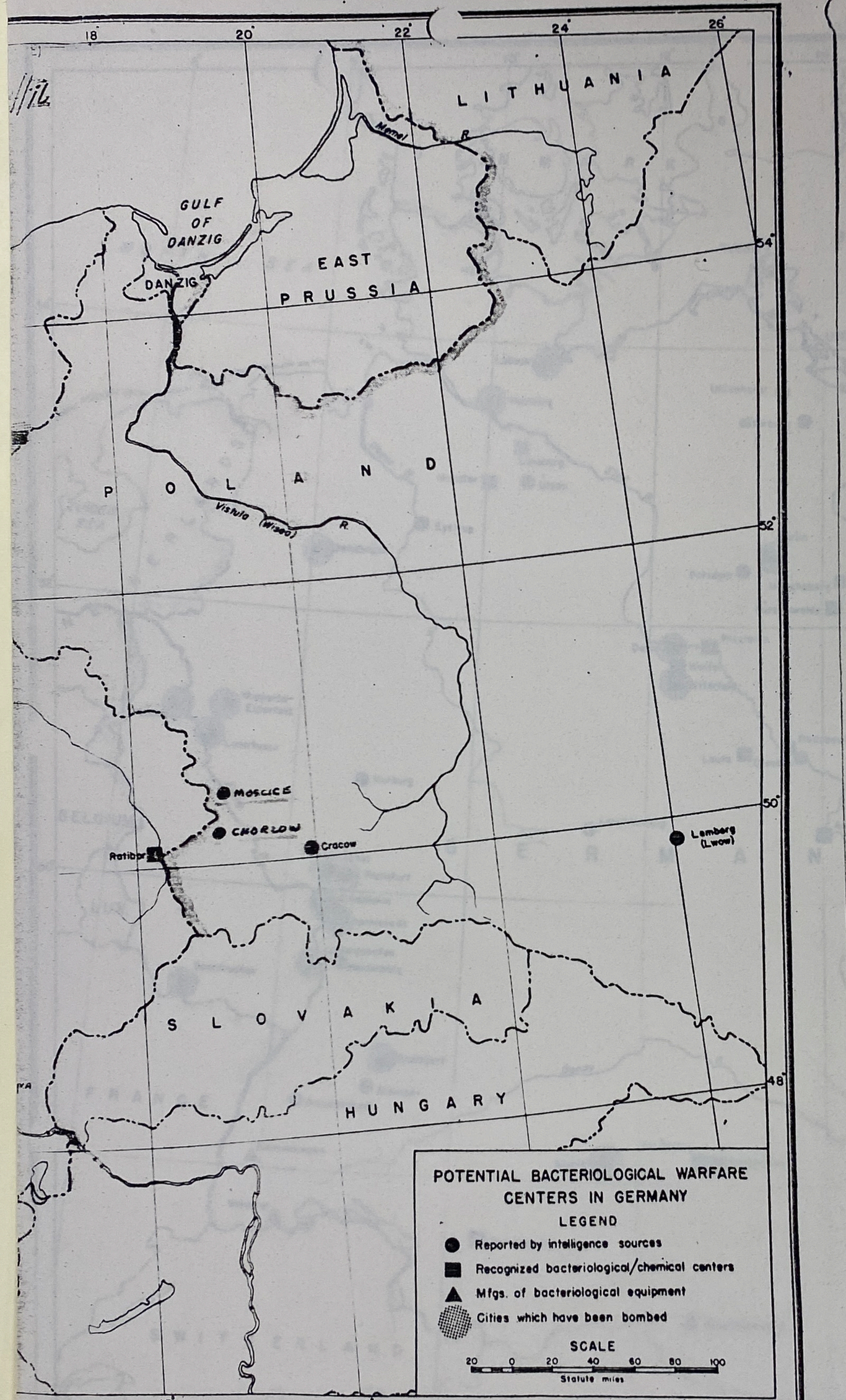
Arms Russia World War, 1939-1945 Germany



Boris Pash

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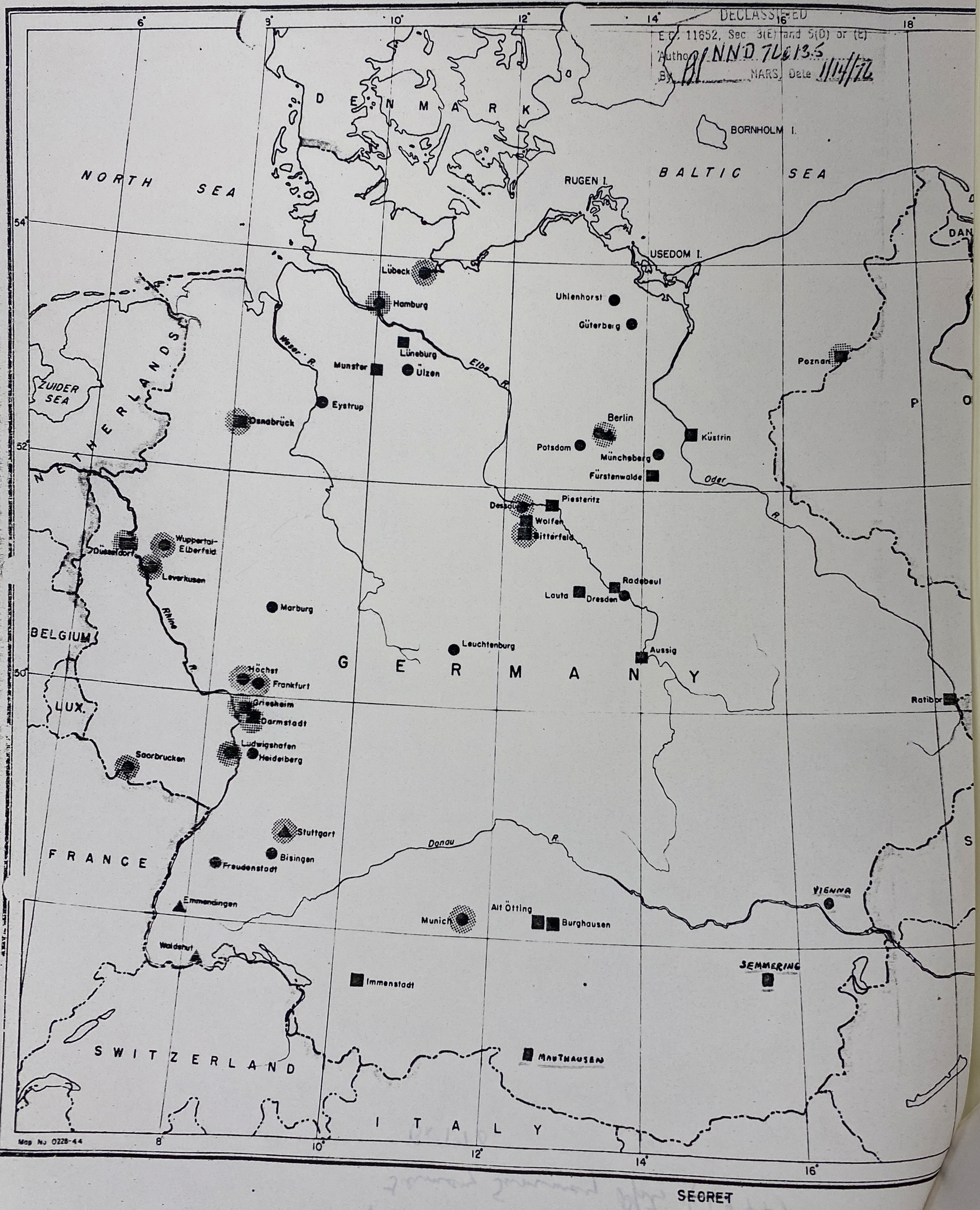

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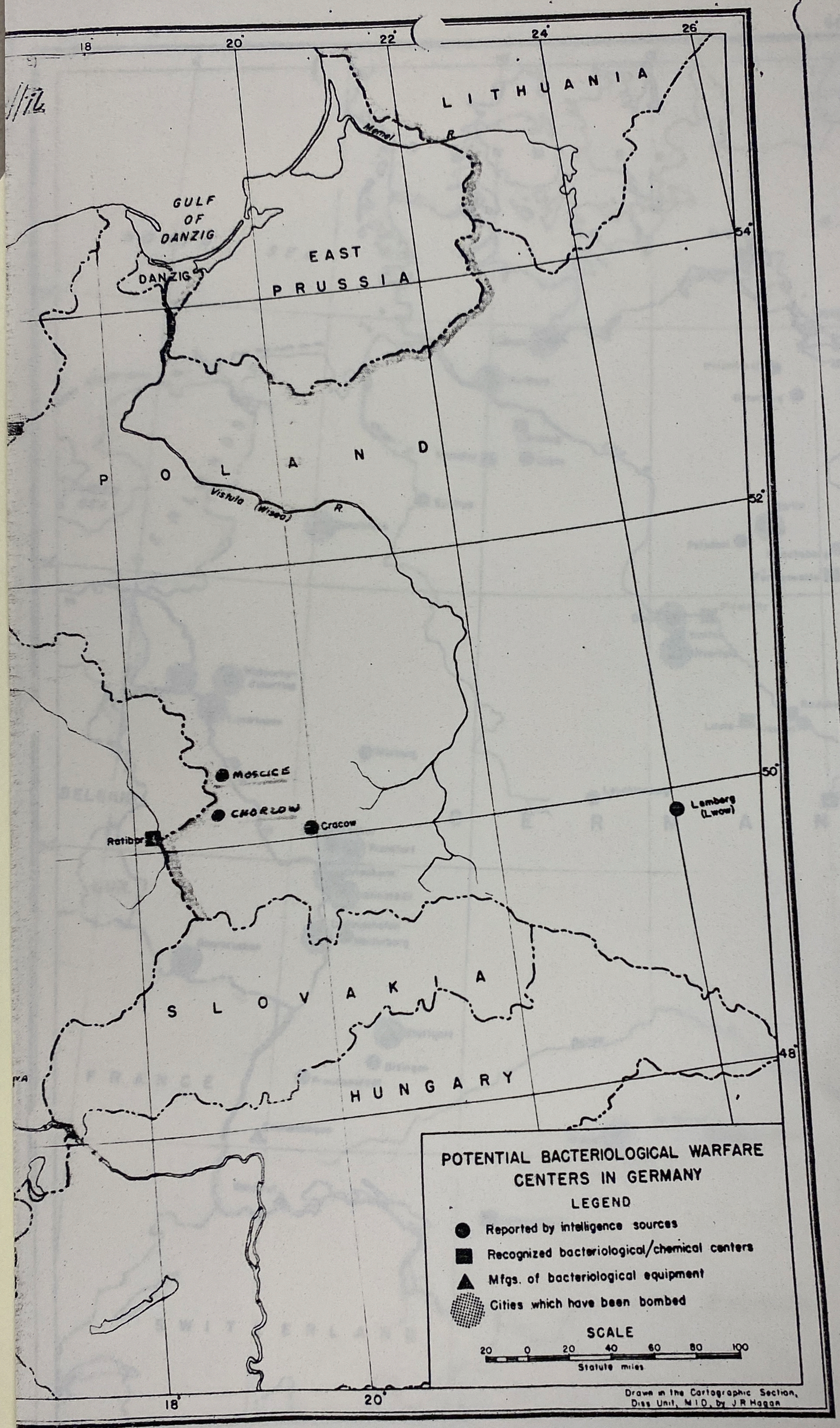
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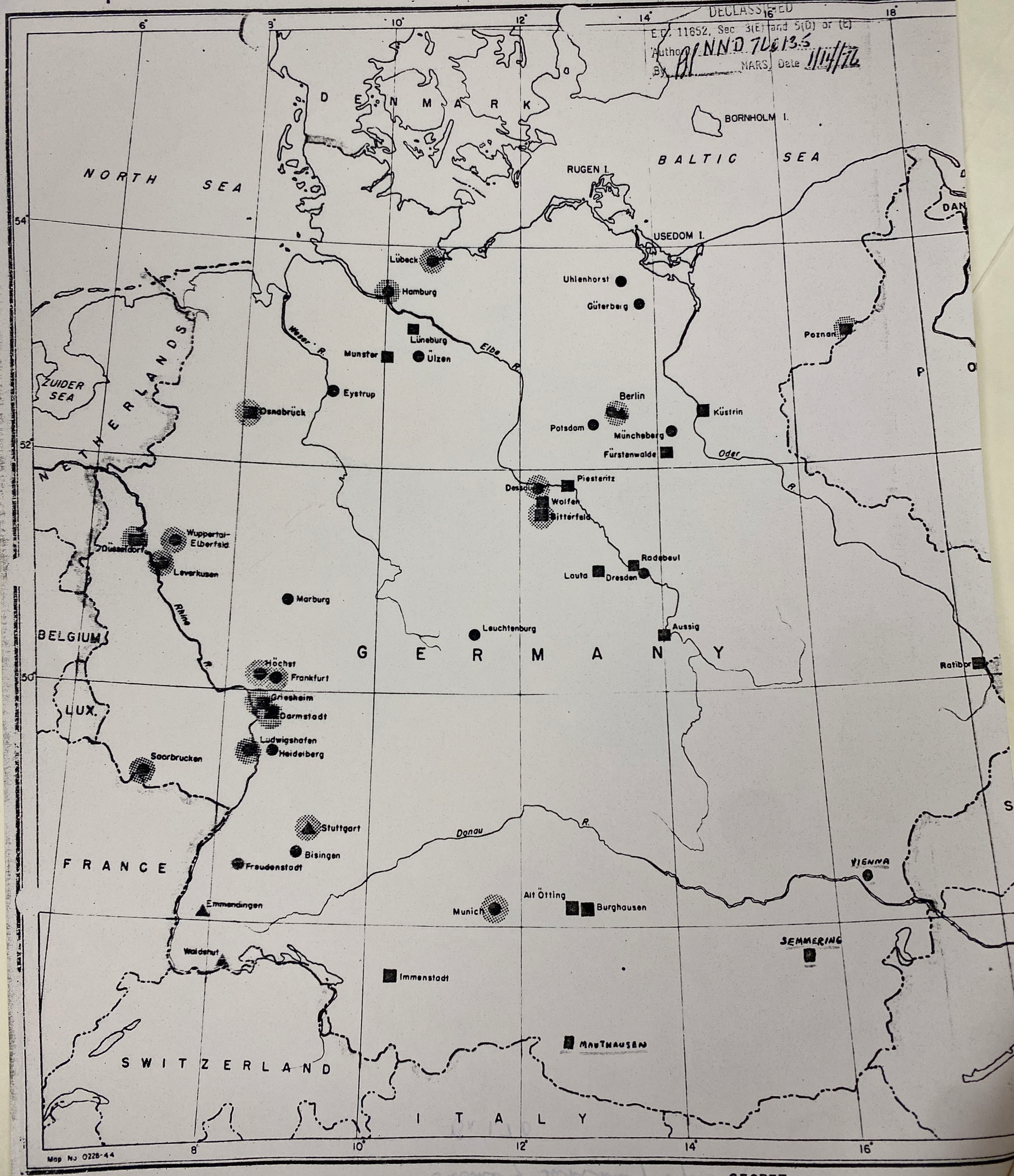

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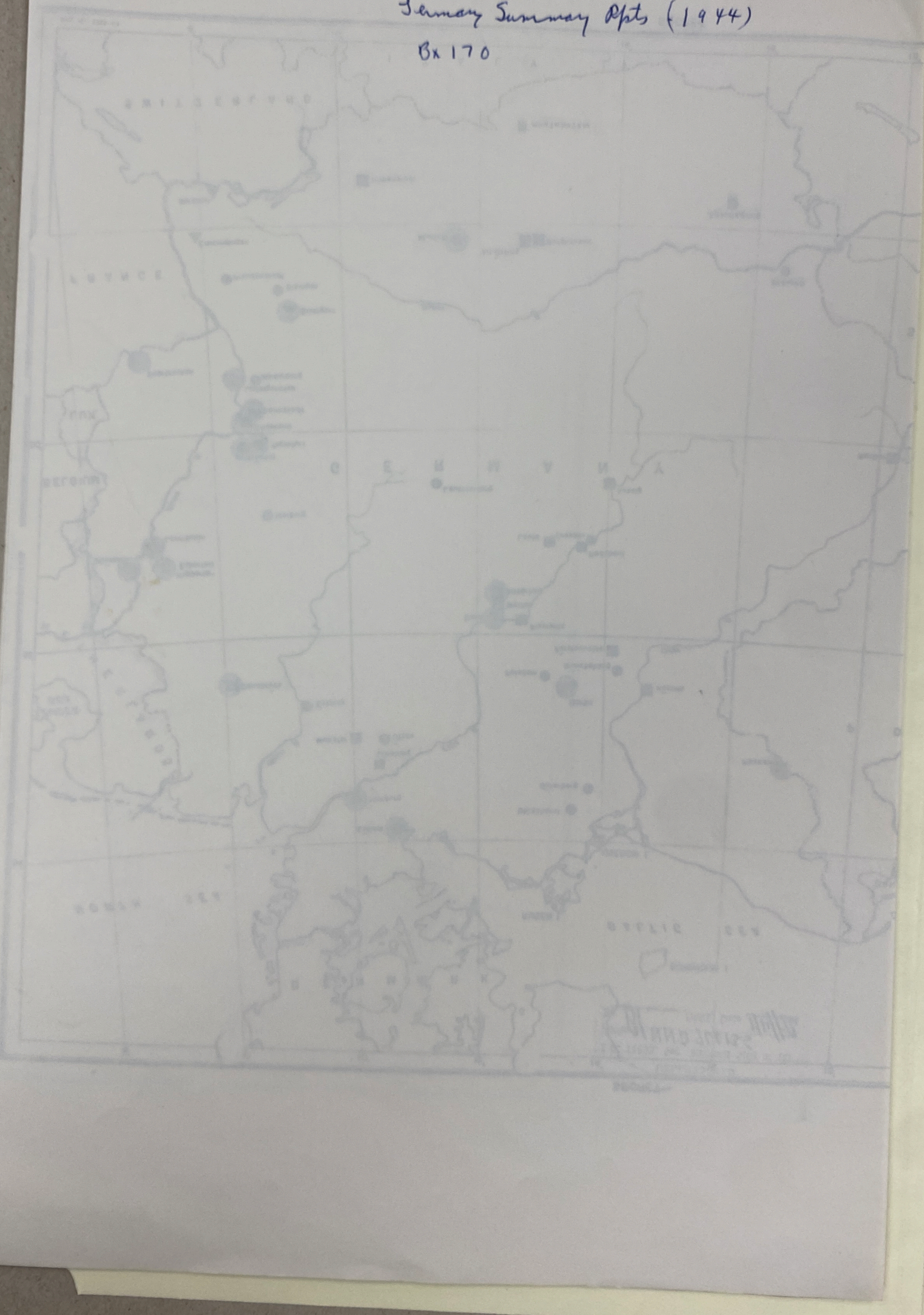
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